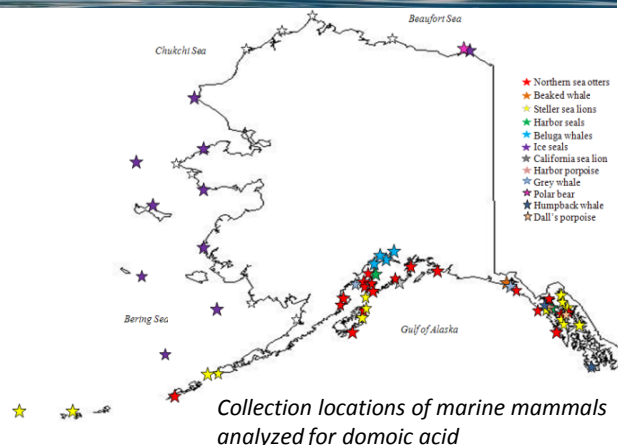
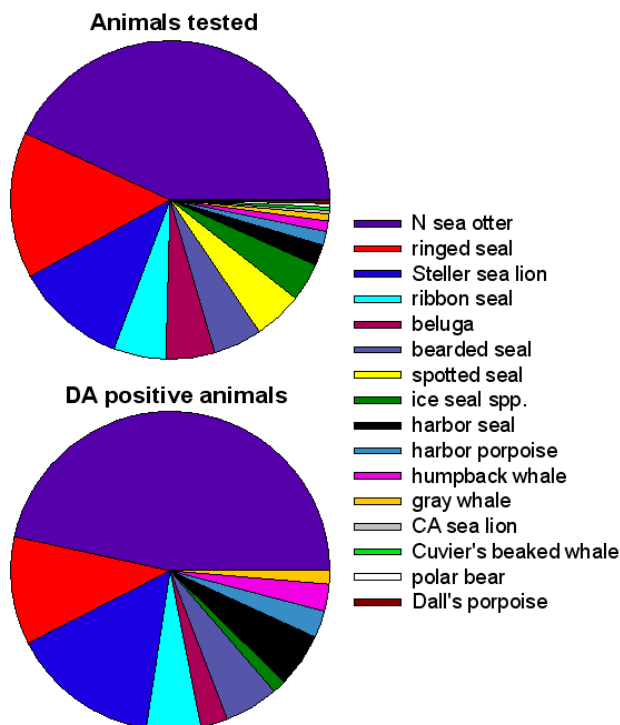


Domoic Acid in Alaskan Marine Mammals: part of the WARRN-West program

Current climate trends are likely to expand the geographic range and duration of conditions favorable to algal blooms in northern regions, making algal toxins such as domoic acid (the causative agent of amnesic shellfish poisoning) a growing concern in Alaskan marine food webs. While the species of phytoplankton whose members can produce domoic acid (DA) are not new to Alaskan waters, there are no major historical reports of DA-related toxic events in Alaska, unlike in California, where marine mammal mortalities due to domoic acid occur yearly. Now is the time to establish baseline measurements of domoic acid in higher trophic levels of the Alaskan food web, before the problem becomes as common as in California, and the opportunity to document true baseline conditions is lost.



We at the Wildlife Algal Toxin Research and Response Network for the West Coast (WARRN-West) located at the NOAA Northwest Fisheries Science Center in Seattle are currently conducting a study on algal toxin exposure in marine mammals and how this exposure could be impacted by climate change. The overall goal of the project is to characterize current spatial and temporal patterns of domoic acid in Alaskan marine mammals. The project has been very successful in its first two years thanks in large part to participation by the Alaskan Marine Mammal Stranding Network. We received and analyzed 329 samples from Alaskan marine mammals, representing 283 individual animals from 16 species, including threatened and endangered species such as belugas, ice seals, and polar bears. Of these 283 animals, 73 were positive for DA, though at levels lower than those attributed to causing marine mammal mortality in areas with persistent DA events such as California.



With this data we have begun to establish a database that reflects current patterns of domoic acid prevalence for a range of Alaskan marine mammals which will be used to:

- evaluate the risk algal toxins pose to the health of Alaskan marine mammals and the human populations which share their diet and/or consume them directly,
- quantitatively assess future changes in toxin prevalence and exposure, and
- enhance our understanding of how algal toxins move through the food web to higher trophic levels.

If you are interested in submitting samples for algal toxin testing, or want further details about the project or results, please contact Elizabeth Frame.

(Elizabeth.Frame@noaa.gov).



Thank you!!

Elizabeth Frame
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Results from the first two years of domoic acid testing: The top pie chart depicts the species distribution of animals tested. The lower pie chart shows the species distribution of DA positive animals.